

AMENDMENTS TO THE CLAIMS

1-18. (Canceled)

19. (Currently Amended) A diffraction optical element divided into a plurality of grating regions, each of the grating regions having a grating with a pitch that is different from pitches of the other grating regions, and each of the grating regions having a different duty, where the duty denotes the ratio of the width of a protrusion of the grating region to the pitch of the grating region, wherein at least one of said plurality of grating regions has a variable pitch and a variable groove width.

20. (Original) The diffraction optical element according to claim 19, wherein the grating of each of the grating regions is formed using a birefringent material, and the duty of the grating region with the smallest pitch is set less than the duties of the other grating regions, depending on the birefringence of the birefringent material.

21. (Original) The diffraction optical element according to claim 19, wherein the grating of each of the grating regions is formed using a birefringent material, and the duty of the grating region with the smallest pitch is set greater than the duties of the other grating regions, depending on the birefringence of the birefringent material.

22. (Original) The diffraction optical element according to claim 19, wherein the duty of each of the grating regions is determined so that the diffraction efficiencies of the grating regions become substantially equal to each other.

23. (Original) The diffraction optical element according to claim 19, wherein the grating of each of the grating regions is formed in an optically anisotropic and birefringent material, and grooves of the grating are filled with an isotropic material.

24. (Original) The diffraction optical element according to claim 23, wherein the optically anisotropic and birefringent material is a drawn film of organic polymer.

25. (Original) The diffraction optical element according to claim 19, wherein the grating of each of the grating regions is formed in an optically isotropic material, and grooves of the grating are filled with an optically anisotropic and birefringent material.

26. (Original) The diffraction optical element according to claim 25, wherein the optically anisotropic and birefringent material is liquid crystal.

27-33. (Canceled)

34. (Currently Amended) An optical pickup device comprising:

a light source for emitting a light beam; a condensing lens for guiding the light beam onto an optical recording medium;

a diffraction optical element positioned on an optical path extending between the light source and the optical recording medium; and

a photodetector for receiving a portion of the light beam reflected from the optical recording medium and diffracted from the diffraction grating, the diffraction optical element being divided into a plurality of grating regions, each grating region having a grating with a different pitch, and a duty of the grating of each of the grating regions being set in accordance with the associated pitch, where the duty denotes a ratio of the width of a of the grating region to the pitch of the grating region, wherein at least one of said plurality of grating regions has a variable pitch and a variable groove width.

35. (Previously presented) An optical disk drive comprising an optical pickup described in claim 34, for recording and reproducing information in and from, respectively, a recording medium.